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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/539,409	03/30/2000	Masahiko Yamada	Q56564	7984

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EXAMINER

BHATNAGAR, ANAND P

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 02/03/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/539,409

Applicant(s)

YAMADA, MASAHIKO

Examiner

Anand Bhatnagar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-31 is/are rejected.
- 7) ☒ Claim(s) 32 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's amendment filed on 11/10/03 (paper #6) has been entered and made of record.
2. Applicant has amended claims 1, 3, 5, 7, 16, 18, 20, and 22. Applicant has added 3 new claims (#31-33). Currently claims 1-33 are pending.
3. Examiner withdraws the 35USC 12, 2nd paragraph, rejection for claims 3, 5, 7, 18, 20, and 22 since they have been amended to overcome the rejection.
4. Applicant's arguments filed on 11/10/03 (paper #6) have been fully considered but they are not persuasive. Applicant in essence argues, regarding claims 1 and 16, in paper # 6 page 11 2nd paragraph, that the annotation image derived in prior art of Wang (U.S. patent 6,477,262 B2) is not a radiation image and that the annotation image being stored is not the radiation image being stored. Examiner agrees that the annotation image is not a radiation image but the examiner never said that the annotation image is the radiation image. The radiation images are element 10 (analog mammogram) and element 40 (which is the digitized version of the analog mammogram) in fig. 1 of the prior art of Wang. The digital mammogram #40 is inherently stored along with the annotation map in the storage unit (fig. 1 #70) since the image is obtained from the storage unit to be displayed onto a high resolution TV screen along with the annotation map (fig. 1 elements #400 and 450).

Applicant further argues, regarding claims 1 and 16, that the prior art of Wang (U.S. patent 6,477,262 B2) does not teach the limitation of "a designated

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measuring point to measure geometric features of an object included in a radiation image” and that Wang is silent about measuring points designed to measure the geometric features, such as distance and angle and the like between the marked measuring points”. As for the limitation of “a designated measuring point”, this is a new limitation in the presently amended claim and was not present in the claim as originally filed. As for the prior art of Wang being silent about “the measuring points designed to measure the geometric features, such as distance and angle,” this is nowhere in the claim language. The language in claims 1 and 16 does not define what are measuring points nor defines what are geometric features of an object. Therefore examiner reads these terms broadly where the measuring point is read as the “markers” placed near the detected abnormalities and the geometric feature of an object is read as the boundary of the breast in the prior art of Wang.

Applicant further argues, regarding claims 1 and 16, in paper #6 bottom of page 11 and top of page 12, that the radiation image does not include the measuring point. Examiner disagrees. The prior art of Wang discloses to combine the annotation image #55, containing the markers, with the digital mammogram #40 and displaying this combined image #450 onto a high resolution display #400 (Wang col. 7 lines 45-60). Nowhere in the claim language is it specified how the measuring points are incorporated into the radiation image, therefore, the combining of the annotation image, containing the markers

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"measuring points", with the digital mammogram is read as "a radiation image including a measuring point".

Applicant argues (regarding claims 5, 6, 20, and 21) that the prior art of Wang does not dictate how the radiation image, measurement and positional information are stored. The prior art of Wang discloses to embed information, such as patient information, into the digital mammogram (col. 7 lines 34-38) but does not teach to embed positional information into the radiation image. It is obvious to one skilled in the art to place other relevant data pertaining to the radiation image or substitute the patient information with other data, such as positional data of the detected abnormality, deemed to be more relevant information to be gathered and displayed.

Applicant argues (regarding claims 9-13 and 24-28) that the prior art of Wang does not show an enlarged portion of an image to be displayed. Examiner as discussed in the office action (paper # 4) that Wang discloses to have a reduced size image shown and it is obvious to one skilled to modify the system to have an enlarged image so that a specific region may be analyzed more intensively.

Applicant last point (regarding claims 14, 15, 29, and 30) is that these claims describe an image indicated by an indicating mark and requests a reference showing this feature since an Official Notice was given to this feature. This is addressed in the rejection below. Examiner refers to the rejection below.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-8 and 16-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (U.S. patent 6,477,262).

Regarding claims 1 and 16: A storing method (Wang et al. fig. 1 element 70) comprising the step of:

storing a radiation image displayed on a display screen of an image display unit (fig. 1 elements 10, 40, 55, 70, 200, 400, and 450, where a digital mammogram image “radiation image” that is displayed is stored in the storage unit #70) the radiation image including a measuring point designated for measuring geometric features of an object included in a radiation image (fig. 1 elements 55-59 and 450, where the abnormality locations are marked by location markers, elements 56-59, the location markers are read as measuring points and the annotation map is combined with the digital image and displayed which is read as a measuring point in the radiation image. The boundary of the breast is detected read as measuring geometric features of an object.); and

wherein positional information of said measuring point specified on said display screen is stored in a storage medium along with said radiation image (fig. 1 elements 55-59, 70, 200, and 400, col. 5 lines 66-67, and col. 6 lines 1-3 and 27-32 where the annotation map is a x-y coordinate map "position information" of the locations of the detected abnormalities which are marked by location markers, elements 56-59. The digital images as well as its corresponding identification are stored in a storage unit, element 70. The corresponding identification is read as all the information obtained regarding the abnormalities in the annotation map, which is the position data, location markers, as well as the probability values).

Regarding claims 2 and 17: The storing method as set forth in claim 1, wherein a result of measurement (col. 5 lines 53-57 and col. 6 lines 1-3, the probability values are read as the "result of the measurement"), obtained based on said positional information, is stored along with said radiation image and said positional information (fig. 1 elements 55-59, 70, 200, and 400, col. 5 lines 66-67, and col. 6 lines 1-3 and 27-32 where the annotation map is a x-y coordinate map "position information" of the locations of the detected abnormalities which are marked by location markers, elements 56-59. The digital images as well as its corresponding identification are stored in a storage unit, element 70. The corresponding identification is read as all the information obtained regarding the abnormalities in the annotation map, which is the position data, location markers, as well as the probability values).

Regarding claims 3 and 18: The storing method wherein said positional information and a measurement result of said measuring point are stored as numerical information (abstract; where the probability value "measurement result" can be numerical or analog form and the position information is in x-y coordinates, i.e. numerical form).

Regarding claims 4 and 19: The storing method wherein said positional information and said measurement result are stored as numerical information (abstract, where the probability value "measurement result" can be numerical or analog form and the position information is in x-y coordinates, i.e. numerical form).

Regarding claims 5 and 20: The storing wherein said positional information and a measurement result of said measuring point are stored as image information that is embedded in said radiation image and displayed (col. 7 lines 54-59, where the data, position and probability values "measurement result", can be displayed on top of or in registration with the digital mammogram, where in registration is read as embedding data into the digital mammogram).

Regarding claims 6 and 21: The storing method as set forth in claim 2, wherein said positional information and said measurement result are stored as image information that is embedded in said radiation image and displayed (col. 7 lines 54-59, where the data, position and probability values "measurement result", can be displayed on top of or in registration with the digital mammogram, where in registration is read as embedding data into the digital mammogram).

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Regarding claims 7 and 22: The storing wherein said positional information and a measurement result of said measuring point are stored as overlay image information that is overlaid on said radiation image and displayed (col. 6 lines 59-64, where the annotation map, which contains the location/position information as well as the probability values "measurement result", can be superimposed on the image. The superimposing is read as "overlaying").

Regarding claims 8 and 23: The storing method wherein said positional information and said measurement, result are stored as overlay image information that is overlaid on said radiation image and displayed (col. 6 lines 59-64, where the annotation map, which contains the location/position information as well as the probability values "measurement result", can be superimposed on the image. The superimposing is read as "overlaying").

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A.) Claims 9-13 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (U.S. patent 6,477,262).

Regarding claims 9-13 and 24-28: The storing method wherein said radiation image is an entire image representing the whole of said radiation image and an enlarged image of a portion of said entire image displayed for specifying said measuring point.

Wang discloses where a mammographic image may be displayed in different ways, such as superimposing information on the image or placing information on the image directly. Wang further discloses to display a large version of the mammographic image with a small version of the annotation image on the same display image (fig. 1 element 400, 55, and 450, and col. 7 lines 51-60). It would have been obvious to one skilled in the art to modify the system of Wang where more display options of images can be incorporated, such as having an enlarged portion of a portion of the image being displayed along with the whole image.

B.) Claims 14, 15, 29, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (U.S. patent 6,477,262) and Wislocki (U.S. patent 4,933,670).

Regarding claims 14, 15, 29, 30, and 31: These claims are rejected for the same reasons as claims 1 and 16 above and for the following limitation of enlarging a image portion and indicating a mark in the image for the region and displaying the enlarged portion.

Wang discloses to store a digital mammogram and an annotation map, containing markers. Wang further discloses to have a reduced image displayed. Wang does not disclose wherein a portion of an image is enlarged by manual manipulation and a mark indicating the region is applied to the image and the enlarged image displayed. Wislocki teaches a device which is used to manually manipulate medical diagnostic images in a CAD/CAM system wherein the image can be enlarged rotated, shifted, etc. and a indicating mark applied to the image (Wislocki; col. 1 lines 5-17 and col. 4 lines 5-15). It would have been obvious to one skilled in the art to combine the teaching of Wislocki to that of Wang because they are analogous in obtaining medical diagnostic images. One in the art would have been motivated to incorporate the teaching of Wislocki to that of Wang in order to have a system where manual manipulation of an image can be performed wherein an image maybe manipulated such as enlarged or rotated for closer analysis or in a different viewing direction.

Allowable Subject Matter

7. Claims 32 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Bhatnagar whose telephone number is (703) 306-5914, whose supervisor is Amelia Au whose number is 703-308-6604, group fax is 703-872-9314, and Tech center 2600 customer service office number is 703-306-0377.

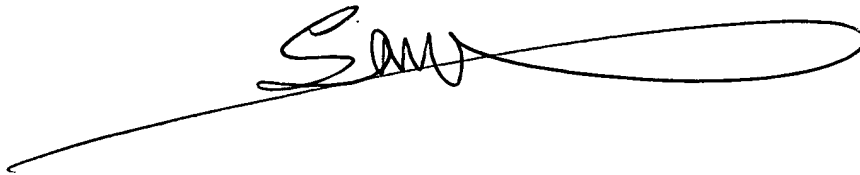
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AB

Anand Bhatnagar

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January 24, 2004

A handwritten signature in black ink, appearing to read "Samir", followed by a long, horizontal, looping flourish that extends to the left.

**SAMIR AHMED
PRIMARY EXAMINER**